What is Claimed:

1. A circuit for applying a transfer function to an input signal comprising:

an input line for receiving the input signal;

a plurality of operators for generating piecewise-linear segments of the transfer function; and

a window detector for determining a value of the input signal and selecting one of the operators based on the value of the input signal;

wherein the selected one of the operators applies a correction value to correct the value of the input signal.

2. The circuit of claim 1 wherein the selected operator generates the piecewise-linear segment free of a table for defining the piecewise-linear segments of the transfer function.

3. The circuit of claim 1 wherein each of the operators generates a different one of the piecewise-linear segments of the transfer function.

4. The circuit of claim 3 wherein each of the operators simultaneously generates a respective correction value responsive to the value of the input signal; and

the circuit further including a multiplexer for selecting one of the respective correction values to correct the value of the input signal.

5. The circuit of claim 4 wherein the window detector includes a plurality of digital comparators and an encoder for selecting the one respective correction value to correct the value of the input signal.

6. The circuit of claim 1 wherein the selected operator includes a multiplier for multiplying the value of the input signal with a value of a slope of the piecewise-linear segment generated by the selected operator.

7. The circuit of claim 1 wherein the selected operator includes a subtractor, a multiplier and an adder;

the subtractor subtracting a lower value of the piecewise-linear segment, generated by the selected operator, from the value of the input signal to provide an offset value;

the multiplier multiplying the offset value with a value of a slope of the piecewise-linear segment to provide a product; and

the adder adding the product and a low output value of the piecewise-linear segment to provide the correction value.

8. The circuit of claim 1 wherein the input signal is a video signal and the transfer function is an inverse gamma transfer function.

9. A gamma correction circuit for applying an inverse gamma transfer function to an input video signal, the circuit comprising:

an input line for receiving the input video signal;

a plurality of operators for generating piecewise-linear segments of the inverse gamma transfer function; and

a window detector for determining a value of the input video signal and selecting one of the operators based on the value of the input video signal;

wherein the selected one of the operators applies a correction value to correct the value of the input video signal.

10. The circuit of claim 9 wherein the selected operator generates the piecewise-linear segment free of a table for defining the piecewise-linear segments of the inverse gamma transfer function.

11. The circuit of claim 9 wherein each of the operators generates a respectively different one of the piecewise-linear segments of the inverse gamma transfer function.

12. The circuit of claim 11 wherein each of the operators simultaneously generates a respective correction value responsive to the value of the input signal; and

the circuit further including a multiplexer for selecting one of the respective correction values to correct the value of the input video signal.

13. The circuit of claim 12 wherein the window detector includes a plurality of digital comparators and an encoder for selecting the one respective correction value to correct the value of the input video signal.

14. The circuit of claim 9 wherein the operator includes a multiplier for multiplying the value of the input video signal with a value of a slope of the piecewise-linear segment generated by the selected operator.

15. The circuit of claim 9 wherein the operator includes a subtractor, a multiplier and an adder;

the subtractor subtracting a lower value of the piecewise-linear segment, generated by the selected operator, from the value of the input video signal to provide an offset value;

the multiplier multiplying the offset value with a value of a slope of the piecewise-linear segment to provide a product; and

the adder adding the product and a low output value of the piecewise-linear segment to provide the correction value.